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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William M Lee Jr
Lee Mann Smith McWilliams Sweeney & Ohlson
P O Box 2786
Chicago, IL 60690-2786

EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2633	6

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/584,330	UNITT ET AL.	
	Examiner	Art Unit	
	Shi K. Li	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 19-20 is withdrawn in view of the newly discovered reference(s) to Coden et al. (U.S. Patent 5,109,448). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 8-10, 12 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Darcie et al. (U.S. Patent 6,493,335 B1).

Regarding claims 1, 10 and 17-18, Darcie et al. discloses in FIG. 14B a passive optical network (PON). FIG. 14B comprises a head-end station (CO) 10, a plurality of subscriber stations EU20 (only one is shown in the diagram) and passive optical splitters 15a and 15b for providing connectivity for the stations. FIG. 14B also shows a common optical wavelength λ_1 for subscribers to send upstream data. Each station comprises RCV for detecting when another subscriber station is transmitting. The subscribers receive broadcast data on λ_2.

Regarding claims 2-3, Darcie et al. explains in col. 2, line 54-col. 3, line 12 that the network deploys carrier sense/collision detection (CSMA) and Ethernet protocol.

Regarding claim 4, Darcie et al. explains in col. 16, lines 11-19 that the network operates at bit rates of the order of 1Gbit/s.

Regarding claim 5, the PON of Darcie et al. loops back λ_1.

Regarding claims 8-9 and 16, FIG. 14B of Darcie et al. is a telecommunications access network.

Regarding claim 12, FIG. 14B includes splitter to split λ_1 and λ_2.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 6-7 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al. (U.S. Patent 6,493,335 B1) in view of Ota (U.S. Patent 5,282,257) and Ota (U.S. Patent 5,915,054).

Darcie et al. has been discussed above in regard to claims 1-5, 8-10, 12 and 16-18. The difference between Darcie et al. and the claimed invention is that the loop back arrangement of Darcie et al. provides connectivity from each subscriber back to itself. Ota '054 teaches in col. 3, lines 4-21 that by using a coupler such that a signal transmitted from a node will never return to the node, collision detection can be simplified such that if a signal is detected at the receiving port it is determined that a collision has occurred. Ota '054 cites Ota '257 (U.S. Patent Application 07/813,443) for such a coupler. One of ordinary skill in the art would have been motivated to combine the teachings of Ota with the access network of Darcie et al. because the coupler of Ota '257 simplifies the collision detection circuit. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a coupler that provides

no optical connectivity from an input port to its corresponding output port and use a simple light detector for collision detection, as taught by Ota, in the access network of Darcie et al. because the coupler of Ota '257 simplifies the collision detection circuit.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al., Ota '335 and Ota '257 as applied to claims 6-7 and 13-14 above, and further in view of Kavehrad et al. (U.S. Patent 4,701,909).

Darcie et al., Ota '335 and Ota '257 have been discussed above in regard to claims 6-7 and 13-14. The difference between Darcie et al., Ota '335 and Ota '257 and the claimed invention is that Darcie et al., Ota '335 and Ota '257 do not teach the use of PIN diode for light detection. It is well known in the art that PIN diode and Avalanche photodiode (APD) are commonly used as photodetectors for detecting light signals. For example, Kavehrad et al. teaches in FIG. 1 and col. 8, line 24 a collision detection circuit using APD or PIN diode. One of ordinary skill in the art would have been motivated to combine the teaching of Kavehrad et al. with the modified access network of Darcie et al., Ota '335 and Ota '257 and use a PIN diode as a light detector because PIN diode is fast and inexpensive. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use PIN diode as light detector, as taught by Kavehrad et al., in the modified access network of Darcie et al., Ota '335 and Ota '257 because PIN diode is fast and inexpensive.

7. Claims 19-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Darcie et al., Ota '335 and Ota '257 as applied to claims 6-7 and 13-14 above, and further in view of Coden et al. (U.S. Patent 5,109,448).

Darcie et al., Ota '335 and Ota '257 have been discussed above in regard to claims 6-7 and 13-14. The difference between Darcie et al., Ota '335 and Ota '257 and the claimed invention is in the structure of the passive coupler. Coden et al. discloses in FIG. 2 a passive coupler that has the feature of the instant claims. One of ordinary skill in the art would have been motivated to combine the teaching of Coden et al. with the modified access network of Darcie et al., Ota '335 and Ota '257 because the coupler of Coden et al. has the same feature of Ota that there is no optical connectivity from an input port to its corresponding output port and is much simpler in design and manufacturing. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the passive coupler of Coden et al. in the modified access network of Darcie et al., Ota '335 and Ota '257 because the coupler of Coden et al. is simple in design and manufacturing.

Response to Arguments

8. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant's arguments with respect to claims 10 and 12-18 have been fully considered but they are not persuasive.

The Applicant amends claim 10 such that the word "receive" has been changed to "detect" and argues that the transceiver of claim 10 has "**a detector (not a receiver)**". However, the specification recites in page 11, line 4-6 "collision detection can be performed reliably by a much simpler receiver". That is, a detector is a receiver and the Applicant's argument contradicts the specification. Therefore, the argument that a detector is not a receiver is not sustainable. Since the Applicant also amends the claim to limit the transmitter to transmit data only on a

single optical frequency, the Examiner withdraws the rejection based on Papadimitriou and rejects the claim based on new grounds.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 703 305-4341. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

skl

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600